SOUTH CENTRAL UTAH TELEPHONE ASSOCIATION
P.O. Box 555
Escalante, Utah 84726

Magalie Roman Salas, Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: CC Docket No. 94-102
Broadband PCS Station KNLG223
BTA 392 (St. George, Utah)
Third Quarterly Report

Dear Ms. Salas:

This report is filed pursuant to the Commission's *Fourth Report and Order*, in CC Docket No. 94-102, released December 14, 2000.

South Central Utah Telephone Association (South Central), a rural area telephone cooperative, is the licensee of the referenced station in the Broadband Personal Communications Service. South Central serves the St. George, Utah BTA on the PCS F-block. We commenced service with 12 original PCS sites and two repeater sites. The majority of the populated land area outside of the main population areas of St. George and Cedar City is rural and will be costly to build out. Though we have satisfied our construction requirements, there are many very small communities that have yet to be served. We began last year to fulfill our commitment to these communities by building six new PCS sites and three repeater sites. We hope to expand our service further into these rural areas as the market and funding allow.

We have been following the progress of the Wireless TTY Forum and working with our switch supplier, Nortel Networks, at its Parker, Colorado location, toward effecting compliance with the Commission's requirements for providing TTY access to E-911 calling systems over our PCS facilities. Our progress as of June 30, 2001 is summarized below using the outline at paragraph 17 of the *Fourth Report and Order*:

Development Activities

1. Network infrastructure software development – South Central completed its last switch upgrade at the end of 2000 on a scheduled PCL Simplification program

(software and hardware upgrades) that allows licensees to keep up with product loads on a scheduled basis.

2. Handset development and testing plans – South Central purchases it handsets from many of the vendor outlets. We make every effort to stay current with the latest handset offering. In the past, however, we have had limited choices due to exclusive agreements between some of the handset manufacturers and some of the larger nationwide carriers, or due to large quantity orders place by the big carriers, which deplete supplies.

3. Beta testing and lab testing – South Central is a small carrier operating on the F-block. While we have no lab testing facilities of our own, we follow the testing and development done by the manufacturers and the larger carriers. Then, we field-test the approved units when they become generally available. We will rely on advice and approved setup instructions provided by the manufacturers and suppliers when placing new equipment into service.

4. Release and general availability to carriers of network infrastructure software – The software release required for digital TTY support on our Nortel DMS-100 switch is LWW-00007 and the Nortel Base Station Controller equipment requires NBSS 10.1. As of June 31, 2001, we were at the LWW-00006 software level on our DMS-100 and NBSS 8.1 on our Base Station Controller.

   On June 8, 2001, Nortel gave us notice that the dual switching platform we are currently using is going to be phased out and replaced by two completely separate wireless and landline switch platforms, leaving us with the original landline switch and a new separate wireless switch. These will operate using the standard landline and wireless software packages, which we will be able to upgrade and operate independently of one another. This will offer the advantage of upgrade flexibility but probably have the drawback of higher upgrade costs and higher operating and maintenance costs to the company, due to the additional expense of maintaining two front-end processors and additional hardware. Details of the costs to reach the new platform are not yet known. But the prospect of significantly greater costs causes us concern due to our very limited budget.

   With the new platforms we will be moved to, the software release required for digital TTY support on our Nortel DMS-100 Wireless Switch is MTX09 and the Nortel Base Station Controller equipment will still require NBSS 10.1.

   As of June 30, 2001, we were still providing services to both landline and wireless customers on a single DMS-100 Switch platform, which uses a combination landline and wireless software load. We remain at LWW0006, which is the equivalent

software level of MTX08 Wireless and LEC10 Landline software loads for our DMS-100 and NBSS 8.1 on our Base Station Controller.

Nortel responded to our requests regarding their efforts toward TTY testing and compliance, On July 10, 2001 and again on October 12, 2001, with a document titled "CDMA_TTY_response_ATIS.doc". The latter was dated October 8, 2001, and addressed the following questions and issues:

Enclosed is information regarding Nortel Networks' plans to comply with FCC's TTY requirements for CDMA service providers.

- What is the status of TTY/TDD network infrastructure software/hardware development and testing?

Nortel response: Nortel Networks' development and product test is based on current standards: IS-127-2 (EVRC) & IS 733-1(13K Vocoder). New revisions of these standards namely IS-127-3 (EVRC TTY) & IS-733-2 (13K TTY) have been published as of September 2001. Nortel Networks plans to support this new addendum to the standards in 2002. Operators will be able to deploy the Nortel Networks TTY solution based on the current standards IS-733-1, IS127-2 to meet the FCC deadline for implementation. Nortel Networks has completed testing using prototype mobile handsets from only a few vendors, which have shown positive results. Nortel Networks does not anticipate performance issues with any other vendor's handsets once they come available.

- What is Nortel Network's TTY/TDD plans to test and confirm solution performance including additional tests referenced in Sections 20-23 of the FCC 4th Rule and Order 12-14-2000?

Nortel response: Regarding Section 20-23, Turbocode and HiSpeed is each a proprietary feature of TTY device vendors Ultratec and Ameriphone, respectively. Due to the code being proprietary Nortel Networks will not test or support these enhanced solutions. Standards are designed to avoid supporting proprietary methods, and Nortel Networks is not aware of any effort to standardize these proprietary features.

- What are the hardware baseline and software baseline to support CDMA TTY/TDD functionality?

Nortel response:

Regulatory solution required	CDMA HW/SW baseline
TTY/TDD	MTX09 SW (DMS-MTX) NBSS10.1.1 SW (BSS) TTY capable handsets (3rd party)

- What software baseline must the MTX be running in order to upgrade to MTX10 and/or NBSS10.1.1?

Nortel response: The MTX is required to be running MTX09 in order to upgrade to MTX10 and/or NBSS10.1.1. Nortel Networks has always maintained an allowance for CSP or Communication Services Platform "jumps" from MTX release to MTX release. The MTX has received significant changes due to moving to a multi-processing architecture thus the CSP layer has evolved to CSP14. It is because of this very different CSP14 layer of the MTX10 release that an MTX cannot upgrade safely from MTX08 directly to MTX10.

- What is the Network infrastructure software/hardware planned general availability dates that support the deployment of this regulatory feature?

  Nortel response: In order to comply with the FCC's December 31, 2001 requirement for TTY/TDD, Nortel Networks commits to delivering the enabling software as follows:

Software load	CDMA SW general availability
MTX09	Now Available
NBSS10.1 with MTX09	October 12, 2001
MTX10 CDMA	December 7, 2001

- How is the software/hardware for TTY/TTD subscribers provisioned in the network?

  Nortel response: The provisioning for TTY must be done the same way as for the voice subscribers.

- What is the schedule for deployment of the software/hardware in the network?

  Nortel response: The minimum baseline software requirements for this functionality are given above. For questions related to scheduling its deployment into a carrier's network, please contact Nortel Networks Product Deployment.

- For TTY/TDD what are the plans to work with any wireless carrier to perform end-to-end customer tests, and when will this occur?

  Nortel response: The verification process for NBSS 10.1 with the customer began in June 2001. Nortel has recommended that the operator engage their chosen CDMA TTY handset vendor during the verification process or VO process to participate in interoperability testing with the Nortel Networks solution. As of October 8, 2001 TTY capable handsets have not been acquired by any of our service provider VO partners. Despite this fact, Nortel Networks' will not delay the delivery of this software load to all customers planned October 12, 2001. This decision not to delay is driven by the importance of the TTY feature, and the positive results of the TTY/TTD internal testing. Nortel Networks' forecast for this specific feature's full verification is planned for the mid-October and for the November time frame with two respective customers.
  Operators are also encouraged to request their handset vendors to test their commercial grade CDMA TTY capable handsets in Nortel's Wireless Interoperability Lab.
  All verification activities are dependent upon the availability of commercial grade CDMA TTY/TTD handsets.

- What are Nortel Network's plans to test their own or other vendor handsets with your switch solution?

  Nortel response: Nortel Networks provides only infrastructure for wireless networks. Nortel Networks does not provide mobile handsets. Even though the infrastructure software is scheduled in advance of the Dec 31, 2001 FCC requirement, commercial handset general availability dates have not been scheduled by handset vendors. Nortel Networks recommends that the operator engage its handset vendor(s) in order to respond to the FCC regarding handset availability.

  Operators are encouraged to request their handset vendors to test their commercial grade CDMA TTY capable handsets in Nortel's Wireless Interoperability Lab.

  Please contact Cher Bruce for scheduling TTY testing in the Nortel Networks Wireless Interoperability Lab, where testing is based on current published standards (Phone: 972-684-2299; Fax: 972-684-3881; csbruce@nortelnetworks.com)

- **Contacts:**

Product Marketing	MTX10/NBSS10.1 SW	Kurt Raaflaub	ESN 445-2971
Product Management	CDMA TTY/TDD	Maniam P	ESN 445-7203
Regulatory	E911Ph2&TTY/TDD	Charles Spann	(903) 852-6798
Product Deployment	CDMA NBSS SW	Mark Schwarzer	ESN 445-5851

5. Availability to carriers of full acceptance test units – See 2 above. We do occasionally receive some units for field trial and testing. However, no units for testing TTY compatibility have been made available to us up to this time.

6. Efforts toward achieving digital wireless solution compatibility with enhanced TTY devices – South Central will work toward another switch upgrade program (PCL Simplification) with Nortel, as our limited budget allows. We will also continue to follow the progress of the TTY Forum.

   As of September 24, 2001 South Central received a budgetary quotation to move our existing platform to LWW00007. At that time we were informed that the "PCL Simplification Program" mentioned above is no longer available and that we will be receiving a straight standard upgrade price. Total costs of this upgrade remain unclear at this time. The preliminary pricing indicates costs ranging as high as nearly one quarter of a million dollars, if we have to upgrade our 1997 processor. Pricing thus far isn't detailed enough to specify whether or not the Base Station Controller upgrade to NBSS 10.1, as specified in 4 above, is included.

   We feel the price quote received from Nortel probably takes into account the NBSS 8.1 to NBSS 10.1 upgrade, although it hasn't been detailed or made clear in the preliminary quote. If this proves not to be the case, the price to South Central would be even higher than expected, creating further strain on the company. Its also unclear whether or not the Nortel's work load (and their reduced work force) will allow them to meet the pending deadline if South Central were able to afford the requisite upgrade, in the face of other simultaneous carrier requests.

   South Central remains most concerned over the potential cost outlay as well as its timing in the funding process. When compared to our limited sized service area and small customer base, the potential for feature cost recovery can be very slim. This issue could be very detrimental to our current small company sized budget and hamper our ability to service other customer needs, including our efforts to compete and grow the company. The final price and impact to the company is yet undetermined and we will continue to study this issue closely and get more detailed upgrade information.

Testing and Deployment Activities

7. Carrier coordination of testing with PSAP – We are continuing work with QWEST and the related PSAPs within our service area to finalize and finish various landline projects. As of June 30, 2001, we have received no requests for E-911 Phase I or Phase II or TTY compatibility testing.

8. Carrier testing activities, including field testing, consumer end-to-end testing and other necessary tests – As described above:

   - Necessary hardware and software loads have not yet been reached. No testing can begin before this occurs.
   - We have had no correspondence from handset manufactures and are not currently aware of compliant or network compatible handsets for our use.
   - South Central is not a priority carrier to handset manufacturers and so it is likely that we will not be among the first to be supplied with compatible equipment for testing or resale.
   - As of June 30, 2001, no correspondence has come forth from handset manufactures to inform South Central of any changes or enhancements available for our testing.
   - On May 24, 2001, we received email from Judy Harkins, Norman Williams and Paula Tucker from Technology Access Program, Gallaudet University about some tools they have been working on, for partial automation of data collection and measuring error rate of TTY over wireless telephones in field conditions. The tools were made available for download free of charge at: http://tap.gallaudet.edu/ttytools. Norman Williams is the author of the software. This was not submitted as a test plan. The tools consisted of data collection software, scoring software, scripts, and documentation. They did not deal with VCO. They said they might publish additional versions if there was interest and if they could work the requested additions into their project. Because few TTY's, even with modification, can receive data from an external device or send to an external device, a limited number of TTY products are supported by the system. However, the three were hopeful that the tools would prove useful.
   - As of June 30, 2001, no handset testing can be done, since the switch doesn't support TTY (See 2 and 5 above). We can't make an assessment of the above tools at this time.
   - As of September 30, 2001 South Central is using CDMA technology. As noted in 3 above South Central is a small carrier, with no lab testing facilities of its own. We follow the testing and development done by the manufacturers and the larger carriers. In doing so, we have noted, in the TTY/TTD Forum – 19 September 26, 2001 meeting Summary, that (1) Sprint PCS (who uses CDMA technology) reported that it has began testing in its internal lab, and

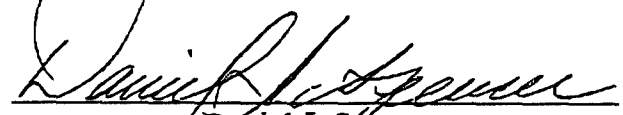
that their testing with vendors is to proceed over the next few months. (2) They reported that they are having some difficulty with interoperability tests, and they have not isolated the problem(s) at this time. (3) They will be testing to determine problems using the Gallaudet software. We have also noted that (4) the TTY Technical Standards Incubator (TTSI) has conducted TDMA tests and will later be scheduling GSM and CDMA tests. TTSI's Ed Hall mentioned that Sprint PCS has been very active with the TTSI and will figure prominently in the TTSI report. It was further stated that, (5) when the tests are complete the test report will be made public. It was requested that, (6) distribution plans for handsets be presented in the December 11, 2001 meeting. The Chair said that this would only be possible if the manufactures are prepared to present that information, and asked manufactures to present this information, if possible.

9. Retail availability of necessary consumer equipment – See 8 above.

10. Geographic scope of network infrastructure deployment – None as of September 30, 2001.

Respectfully submitted,

South Central Utah Telephone Association

By: 

Daniel J. Spencer
General Manager, Treasurer & CEO

Dated: 10-15-01